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PSYCHIATRY AND THE TREATMENT OF DELINQUENCY

During the past decade, the approach to the treatment of criminals and delinquents has undergone a gradual change. In legal as well as in medical circles, increasing emphasis has been placed on the rehabilitation of the offender—on his restoration to society as a responsible, law-abiding citizen who will participate fully in the life of the community. The teachings of modern psychiatry have done much to shape this new outlook, and recent advances in psychiatric methods are being successfully applied in the treatment of delinquency. The article below is based on the report of a seminar held earlier this year to discuss some of the latest trends.

In view of Denmark's advanced legal provisions for dealing with crime and delinquency, and its modern institutions for the treatment of offenders, it was fitting that the seminar on the psychiatric treatment of criminals and delinquents, organized by the WHO Regional Office for Europe, should have been held in Copenhagen. The seminar took place from 28 April to 9 May 1958, and was attended by representatives of 15 countries.[1] They included 23 forensic psychiatrists, 12 general psychiatrists, one child psychiatrist, 6 psychologists, 5 prison directors, 5 criminologists, 3 social workers, and one judge.

Social defence

The attitude to the treatment of criminals and delinquents adopted throughout the discussions of the seminar was based on modern principles of social defence. The traditional approach has been to wait until a crime has been committed and then, having caught the criminal, to mete out to him a punishment varying in severity according to the gravity of the crime. The punishment satisfied the desire of the community for revenge and was also intended to act as a deterrent. But, in fact, experience has shown that even severe forms of punishment may have little deterrent value for certain types of criminal, and that long sentences protect society mainly because they deny the offender the possibility of repeating his crimes during his detention.

Modern social defence aims at giving society the maximum protection, both by seeking to eliminate the cause of crime and by giving the criminal appropriate treatment to prevent a repetition of his crimes. To this end, it is important that there should be adequate collaboration between jurists, psychiatrists, psychologists and members of related professions. Several of the discussions of the seminar centred around the ways in which such collaboration can best be achieved. Although the courts may call on expert opinion in cases where there is doubt regarding the prisoner's mental state, the expert's advice is frequently disregarded. Decisions on the fate, treatment, and after-care likely to be most effective in restoring the criminal to society call for team-work between the judge or tribunal and those concerned with the medico-psychological and social examination of the offender prior to his sentence.

The trial

The concept of social defence does not imply the abolition of punishment, nor that the judicial process should be dispensed with. In fact, it is considered essential that the individual should realize that he will have to account to justice for deeds that are prohibited by law. It was felt, however, that the procedure in courts of law should be carefully reviewed from the point of view of

[1] Austria, Belgium, Denmark, Finland, France, Federal Republic of Germany, Italy, Netherlands, Norway, Poland, Sweden, Switzerland, United Kingdom, USSR, and Yugoslavia.

its psychological effect. The process of prosecution and defence, of exaggeration and counter-exaggeration, is likely to leave the prisoner with the feeling that his conduct and his status as a person are not being considered realistically. Indeed, the court proceedings may actually have the effect of diminishing his sense of responsibility for what he has done, or may make him feel that he is so completely cast out by society that subsequent rehabilitation will be hopeless. In the opinion of the seminar participants, trials should be conducted in such a manner as to make it plain that the ultimate interest of the offender as well as that of the community is being considered. The prisoner should be made to feel that the process of rehabilitation has already begun.

Responsibility

Much discussion was devoted to the subject of responsibility. The approach to this question varies in different countries, some recognizing only totally responsible and totally irresponsible offenders, others making provision for an intermediate group regarded as only partly responsible for their offences. But all the participants agreed that there were certain mentally abnormal, though legally responsible, offenders needing special treatment, that rehabilitation methods were needed for all criminals, and that psychiatry and psychology had a contribution to make to the treatment of " normal " offenders. It was also recognized that a certain individual sense of responsibility is always present, whether the offender is held to be legally responsible or not, and even if he is mentally abnormal. This is extremely important from the psychological point of view, the fullest possible development of the sense of responsibility being one of the principal aims in the treatment of all criminals.

The sentence

From the medical point of view, the length of the sentence should depend upon the time required to complete the course of treatment, rather than upon the gravity of the offence. The fixed sentence rarely suits the psychological needs of the offender: if it is short—less than a year, for example—there is not really sufficient time for treatment; if it is long, maximum improvement may be attained before expiration of the sentence, and further confinement may produce secondary difficulties or a relapse. Many examples were given of the harmfulness of short sentences: the interruption of social life and the absence of constructive rehabilitation measures act against the best interests of the offender—and hence, also, of the community. It was suggested that, where short sentences are imposed, a start should be made with treatment and that means should be devised for continuing this after the prisoner's release.

In some countries, the law permits the passing of an indeterminate sentence, enabling the offender to be kept in detention until his improvement is judged to be sufficient to justify his readmission to society. The fact that his release depends upon his own efforts —upon his progress—means that he is placed in a challenging situation of the type he is likely to meet in the outside world. While recognizing this advantage, the seminar was unable to reach any final conclusions regarding the relative merits of determinate and indeterminate sentences, since the legal systems vary so widely in different countries.

The possibility that jurists, psychiatrists, psychologists and sociologists should collaborate as a sort of " treatment tribunal " to decide the nature of the sentence and course of treatment was discussed at length, but here again no definite conclusions could be reached. It was felt, however, that in countries which do not provide for detailed investigations before the trial, arrangements should be made to defer passing of a sentence after conviction until a thorough psychiatric examination of the offender has been made. This is particularly important where mental abnormality is suspected.

Treatment

The type of treatment which can be given will naturally depend upon the nature of the institution in which the offender is confined, the duration of his sentence, and the staff

available. The members of the seminar expressed the view that in special institutions where active treatment is given for mentally disturbed delinquents, there should be one psychiatrist or psychologist for every 10 to 30 patients, and the ratio of total staff to inmates should be higher than 1:2. In practically every country, however, there is a shortage of staff for the psychiatric treatment of criminals. It was suggested that, where the number of properly trained forensic psychiatrists, experienced in the psychotherapeutic method, is grossly insufficient, it would be more profitable to use them as consultants to the administrators of penal establishments. At the same time, it was pointed out that, however well trained a psychiatrist may be and whatever qualities of leadership he may possess, he is only one member of the therapeutic team, working together with the psychologist, the social worker, the educator and other members of the staff. It is important that the criminal himself should also be actively involved as a member of the therapeutic team. Particular reference was made to the use of non-medical psychologists, not only for screening, selection and vocational guidance, but also in many fields of research, in staff training, and in personnel management.

The treatment of delinquents and criminals can take place either in penal institutions, in special institutions for abnormal offenders, in mental hospitals, or at liberty. Wherever possible, treatment at liberty, with the offenders attending as out-patients at psychiatric clinics, is the method of choice. Although the proportion of offenders who feel a real need for treatment on their own account is quite small, many more will co-operate if given a little persuasion and encouragement. Treatment at liberty offers the advantage that the offender is not cut off from the outside world; his rehabilitation and integration into society are thus greatly facilitated. At the same time, this method provides opportunities for investigating the offender's home background and carrying out active social-case work with his family with a view to eliminating unfavourable factors in his environment. Naturally, treatment at liberty cannot be applied to dangerous criminals, but a well-developed probation service can do much to reduce the risk of the patient's continuing to commit serious offences without action being taken.

Effective psychotherapy can be carried out in ordinary penal institutions, though there are a number of disadvantages. The prison sentence is often felt to be a treatment or punishment exonerating the offender from the need for further action, and it is difficult to secure co-operation. The disadvantages of the fixed sentence have already been mentioned. Moreover, imprisonment itself may tend to produce character disturbances, and much work remains to be done on the possible traumatic effects of repeated imprisonment. The seminar also discussed the potential opposition between punitive measures and psychotherapeutic measures when applied side by side in the same institution. Some participants pointed out that strict security measures could form an obstacle to treatment and could have the effect of making the staff neglect the treatment side of their functions.

Many of the difficulties inherent in treatment in prisons and other institutions can be overcome by practising intensive group therapy along psychoanalytical lines. The value of psychoanalysis was generally recognized by the participants at the seminar, but in its original forms it was thought to be too time-consuming for wide application. On the other hand, it has provided a sound basis for many of the shorter procedures of psychotherapy, and its use as a research tool should not be underestimated. It was emphasized that group methods of treatment must include the possibility of intensive and deep-going procedures. Group therapy provides a small community in which the patient's adjustment can be tested out in real situations. On the other hand, unless it can be extended to all the members of the institution, it does not wholly overcome the tensions created by singling out certain members for special treatment. This line of reasoning leads to the conclusion that it would be preferable to establish special institutions for treatment by such methods.

Special institutions

It was recommended that institutions devoted specifically to the psychiatric treatment of criminals should be small and well staffed. It was not considered important whether they fall under the general penal administration or under the mental health services, so long as they maintain close contact with the latter. Interesting accounts of experience in two such institutions—the Dr H. van der Hoeven Clinic in the Netherlands and the Herstedvester Prison for Psychopaths in Denmark — were presented to the seminar. Important features of these institutions are that they have been developed in association with laws that permit the indefinite detention of the offender, and that an efficient system of after-care ensures legal control and a continuation of treatment after the patient has been discharged.

The van der Hoeven Clinic has accommodation for about 100 delinquents and no patient is admitted under the age of 18. Individual and group psychotherapy are given, but otherwise the patients are encouraged to lead as normal a life as possible and are given a large measure of responsibility. Regulations for the smooth running of the clinic and the daily programme of activities are drawn up by a Patient's Committee, on which the various patients serve in turn. There is also a Supervisory Committee which investigates misdemeanours. At first the members of this committee were inclined to impose severe punishments, but they were soon persuaded that the more constructive approach was to hear the offender's side of the story, to try to discover the reasons for his behaviour, and to help him find a way to repair as far as possible the damage done. The committee has since done a great deal of useful work, and has won such respect that it is frequently consulted by patients who have done nothing wrong but are simply in distress. There are also a number of subsidiary committees, one of which is responsible for handling the financial affairs of the patients. Through serving on these committees, the patients gain an insight into administrative methods and learn to appreciate the difficulties that confront the staff. The various programmes organized by the committees—including sports and other spare-time pursuits —stimulate healthy and constructive activity, the whole aim of the treatment being to bring out potentialities in the patient and to restore his self-confidence.

The Herstedvester institution has adopted an approach that has been termed " dynamic growth therapy ", because it is aimed at starting a process of growth or development that will enable the patient to overcome his need for dependence. The method is based on both group and individual psychotherapy. Affectively charged moments arising out of disciplinary conflicts provide an opportunity to involve the patient in a discussion of the deeper connexions between his present situation and earlier situations of a similar type. It has been found that an intimate knowledge of the case history is of great value in enabling the therapist to provoke the required responses on the part of the patient. In fact, the method of " anamnestic analysis " can itself be used to produce " affective moments ". Through helping the patient to understand some of his own strains and tensions, the attempt is made to replace the self-devaluation characteristic of the chronic criminal by a more optimistic outlook, and to arouse a desire for treatment. As the treatment begins to take effect, more of the patient's energies become available for work and spare-time activities, and group therapy is introduced. Gradually a new pattern of reactions to typical situations is built up, but it is important that continuity of treatment should be preserved after the patient leaves the institution. Usually, contact is maintained for at least three years, and sometimes for much longer.

Castration and allied procedures

Relatively few countries in Europe permit the castration of chronic male offenders, so that experience was insufficient for definite conclusions to be reached. At Herstedvester, the operation has been performed on 149 sex criminals during the last 25 years, and 142 of these have been released on parole, the

remaining 7 having been transferred to mental hospitals. Of those paroled, 18 (12.7%) have relapsed, but only 5 (3.5%) have committed new sex crimes. On the other hand, of sex criminals detained at Herstedvester who had not been recommended for castration or who had refused operation, 50% had relapsed and two-thirds of these had again committed sex offences. The seminar considered it difficult to assess the significance of these figures, however. Many of the participants were reluctant to recommend such a mutilating and irreversible procedure, and others believed that castration had no place in the treatment of criminals. An alternative method of reducing sexual activity is the administration of oestrogens. Although not satisfactory in all cases, it was felt that it could be a useful adjunct to treatment. It was also suggested that more research might be devoted to finding other compounds antagonistic to the male sex hormones but free from the undesirable side effects of oestrogens.

Role of the prison medical officer

The primary concern of the prison medical officer is the ultimate rehabilitation of the prisoner, and he will therefore need to work in close collaboration both with the prison administration and with those who are more directly concerned with after-care. He must be a good general practitioner with an interest in psychotherapy—in fact, to some extent a forensic psychiatrist. He must make regular examinations of the prisoners and arrange for the treatment of any reactive psychiatric disorders, and he may be called upon to make reports to the courts, to advise about sentences, and to recommend the placement of convicted prisoners. An important aspect of his work is the creation of the right social and psychological climate in the prison. The prisoners must recognize that he is interested in their welfare, and the administration will need advice on such questions as prison régime, prison diet and general regulations. Some of the seminar participants were of the opinion that the prison medical officer should undergo considerable training in psychiatry, while others thought this less important and stressed his role as a general practitioner. There was a suggestion that prison medical work should be made a specialty in its own right.

The forensic psychiatrist

The seminar considered that general psychiatrists too often lack training in forensic psychiatry. It was recommended that the post-graduate training of every psychiatrist should include experience in handling and treating delinquents. Stress was laid on the need to develop forensic psychiatry as an independent specialty. It was recommended that university departments of forensic psychiatry should be set up, preferably within the medical faculty, the course to include systematic training in individual and group psychotherapy and experience with all types of delinquents, juvenile and adult. Such departments could also provide additional training for general psychiatrists and could organize courses for lawyers, jurists, social workers and psychologists.

Conclusion

From the general trend of the discussions it was clear that psychiatrists feel they have an important contribution to make to the treatment of criminals and delinquents. As in other fields of mental health, many criminal deviations from "normal" behaviour appear to be due to a maldevelopment or breakdown of inter-personal relations. The courts should therefore have expert advice on the personality of the delinquent in order to enable them to decide on the most appropriate "treatment", whether punitive, medical, social, or re-educative, or any combination of these. In order to arrive at his conclusions, the psychiatrist must have access to all the information available, but there was a general feeling that he should be protected from the necessity of revealing confidential information to the courts. The existence of legal distinctions between different classes of criminals—for instance between psychopaths and habitual offenders, or between respon-

sible and irresponsible offenders—may have little meaning for the psychiatrist. A certain proportion of prisoners regarded as fully responsible will always be in need of psychiatric treatment, and even in the case of those sentenced to primarily correctional and pedagogic treatment, the psychiatrist can play a useful consultant role.

PUBLIC HEALTH LABORATORY SERVICES

The demand for public health laboratories first arose in the second half of the last century after it had been demonstrated that water, milk and food were capable of spreading disease and were frequently responsible for epidemics. Indeed, it was through epidemiological studies that attention was first drawn to the potential dangers of contaminated water and food supplies. With the growth of bacteriology it became possible to devise tests of purity and also to pave the way for routine laboratory diagnosis. As new methods have been developed, the functions of the public health laboratories have been continuously enlarged, and today they form an indispensable part of any public health service.

For several years, WHO has been providing assistance to governments in developing their public health laboratory services, and in 1956 an Expert Committee on Health Laboratory Methods was called together to discuss the problems involved, particularly in countries just starting their laboratory work and in need of expert advice.[1] In the European Region, every country has a more or less well-developed public health laboratory service, but the rapid advances of the last few years have greatly increased the need for international collaboration and co-ordination. With this in mind, the Regional Office for Europe last year convened a meeting of experts to consider the essential services that should be provided by a public health laboratory and to advise on practical measures that might be taken to improve these services within the Region. The Advisory Group met at the Soviet Academy of Medical Sciences in Moscow, and the participants included experts from Denmark, the Netherlands, Poland, Portugal, Sweden, the United Kingdom and the USSR, as well as representatives of WHO.

Functions of a public health laboratory service

In the past, public health laboratories have been concerned almost entirely with the diagnosis, prevention and control of infectious diseases, and these are likely to remain their most important functions for some years to come. But the pattern of disease is changing rapidly and the main " killers " are now cancer and cardiovascular disease. Radio-active contamination of the soil and of food and water is a dramatic example of a new threat to the health of the community, while air pollution is a danger that has been causing increasing concern for some years.[2] The public health laboratories must be ready to undertake research on these problems and to develop new methods of control. They also have their part to play in studies of school and occupational hygiene and in elucidating the causes of mental ill-health.

The basic activities of a public health laboratory embrace a wide range of disciplines. From the first, the microbiological and chemical control of food, drinking-water, sewage and air has been one of the main functions. Today, the microbiologist must also be able to undertake identification of bacteria, viruses and fungi, as well as the preparation of vaccines, sera and antigens for prophylactic, therapeutic and diagnostic purposes; and the chemist may be called upon to make toxicological examinations,

[1] *Wld Hlth Org. techn. Rep. Ser.*, 1957, 128

[2] See *Chron. Wld Hlth Org.*, 1958, 12, 14.

drug assays, and various biochemical studies. The laboratory must be in a position to examine specimens for parasites and to identify vectors and insect pests. Physiological examinations may be required, particularly in connexion with studies on the influence of different types of occupation, sports and noxious factors on health. In recent years, biophysics has become important for tracing radio-activity and the control of microclimates. Finally, a function that has also been growing rapidly in importance is the study of epidemiological methods and their application in communicable and other diseases. In all these fields, active research should be going on within the laboratory service.

Staffing requirements

The Advisory Group devoted considerable discussion to the question of the qualifications and training of scientific staff and auxiliary personnel for public health laboratories. Whereas the director of a central laboratory should hold a medical qualification and have a good knowledge and clinical experience of the diseases connected with the work of the service, the heads of the various specialized departments working under him can be veterinarians, pharmacists or science graduates with special training in their own fields. Each regional laboratory should preferably be in the charge of a microbiologist with a medical qualification. Working under him will be medical or science graduates who have received post-graduate training in bacteriology or other specialties with which the laboratory is concerned. They need not be so highly trained as the experts at the central laboratory but will be expected to cover a wider field. Training should be conducted at a well-established public health laboratory with experienced senior staff, and during the whole period of training the junior staff should be encouraged to do research independently or as members of a team.

The Group stressed the need to arrange seminars and similar meetings for the senior technical staff of the various public health laboratories within any country. It is also important for the directors of the central laboratories in the different countries to meet together from time to time. The first such meeting was held in August of this year in Stockholm on the occasion of the International Congress for Microbiology (see page 337).

The training of laboratory technicians is one of the most important tasks of a public health laboratory service, as the reliability of the work of a laboratory depends to a great extent upon having competent technicians to do the benchwork. Some countries have had whole or part-time schools for technicians for a number of years. They offer a two- to five-year course, and pupils who pass the final examination receive a certificate. The practical training may be done at the central public health laboratory or at a university department. Some countries have no schools for technicians, and in these cases training is given wholly at the public health laboratory.

The Group also discussed the ways in which the staffs of public health laboratory services could be given opportunities for study abroad. These included exchange schemes between individual laboratories, post-graduate courses in various aspects of public health laboratory work, and individual WHO fellowships. It was suggested that the European Office might study the possibility of encouraging countries to set aside at the central laboratory a sum of money for the salaries of one or two visiting workers.

International collaboration

The structure of the public health laboratory service will vary with the needs of the individual country. In some countries there will be only a single, central laboratory service, in others a system of regional laboratories; and the demands made upon the service will also vary, according to the amount of work that can be undertaken in the hospital laboratories. In general, however, each country will build up a complete diagnostic service, and the Advisory Group did not foresee that there would be much

need for direct collaboration between different countries in the diagnostic field, except where methods of examination not yet introduced in one country were already available in a neighbouring country. An example of another type of collaboration is the procedure adopted in venereal disease serology, whereby a number of sera were exchanged among different countries and examined by various methods. Comparison of the results enabled the methods to be standardized and provided information on practical aspects of the techniques used in different countries. Attention was also drawn to the international reference laboratories, such as the Escherichia Centre in Copenhagen and the World Influenza Centre in London, which undertake the typing and checking of uncommon bacteria or viruses, and it was recommended that all European countries should take an active part in the use of these facilities.

Another suggestion made by the Group was that a few large laboratories with special experience should be asked to undertake the centralized production of diagnostic antigens and sera and the supply of type strains. This would ensure uniformity and comparability of test results performed by laboratories in different countries and overcome the difficulty still experienced by some laboratories in obtaining diagnostic reagents or strains of infectious agents. It was thought that each manufacturer could supply a group of countries. In some cases, one laboratory might be able to produce a certain antigen or serum for the whole of Europe; in others, world-wide collaboration would be needed.

The Advisory Group suggested that the Regional Office for Europe could give valuable help by providing reagents and strains free of charge to countries unable to pay for them. Rare or dangerous reagents would be supplied only at the direct request of the central laboratory of the country requiring them, and countries would be expected to train their own staff to produce the reagents they use most frequently, if necessary with WHO assistance. The reagents would be supplied primarily for use in laboratory research and epidemiological investigations, and to a lesser extent for the diagnosis of cases in hospital.

Many countries also experience difficulties in obtaining chemicals, media, apparatus, and scientific literature from abroad, owing to a shortage of foreign currency. It was suggested that this situation might be improved by means of a European clearance system, or that WHO might give financial aid through country programmes. The exchange and distribution of publications among the European public health laboratories should be encouraged. Here the European Office could help by distributing lists of the most important journals on public health laboratory methods. The Office could also act as a clearing-house for the exchange of annual reports between countries. These reports sometimes contain minor unpublished technical information which could be of value to other laboratories.

In general, international collaboration will be channelled through the central laboratory or group of laboratories. In countries where no central service exists, some other body should be appointed to maintain international contacts.

Future trends

The WHO international reference laboratories, of which mention has already been made, at present cover only a fairly restricted number of infectious diseases. It was suggested that similar centres should be set up to follow developments in other fields of public health work, such as occupational hygiene, and to assist in the development of better methods of study and control. This suggestion is in line with the broadening activities of the public health laboratories, and particularly with the increasingly important role that they are playing in epidemiological studies. In many countries, the central public health laboratory has a special department of epidemiology, possibly with a mobile field unit at its disposal. This department arranges epidemiological surveys, assists in investigating epidemics that have spread beyond the territory of a single authority,

and may also handle the notification of infectious diseases. Close co-operation with the executive health service is essential at all levels. To deal with these problems, some countries have appointed a special State medical officer, either attached to the Public Health Board or as head of the department of epidemiology in the central public health laboratory. In the words of the first report of the WHO Expert Committee on Health Laboratory Methods: "Epidemiology provided the original stimulus for the creation of public health laboratories, and it is epidemiology which in its turn is providing the laboratories with one of the chief means by which to assess the prevalence of disease and to bring it under control." [3]

* * *

As a follow-up to the Moscow meeting of the Advisory Group on Public Health Laboratory Services, a two-day meeting was held in Stockholm at the beginning of August 1958, to discuss the collaboration of public health laboratories in Europe. The members of this second Advisory Group included experts from Austria, Czechoslovakia, Denmark, Finland, France, Greece, the Netherlands, Poland, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the USSR, as well as two representatives of WHO headquarters.

Prior to the meeting, a questionnaire had been sent to Member States by the Regional Office, and an investigation had been made into the need for an exchange scheme to provide diagnostic antigens to certain laboratories, as suggested by the first Advisory Group.

In the questionnaire, each Member State was asked to supply, *inter alia*, a list of the most prominent public health laboratories in the country. After discussing the various replies, the Advisory Group agreed that in fact two lists were required—one containing the names of laboratories nominated by the governments to make official contacts with the Regional Office, the other listing all the main public health laboratories, with information on their special activities, such as blood-grouping, serology, and reference work for other laboratories. Some countries might wish to nominate only one laboratory for the first list, others might nominate a separate laboratory for each of the main fields of public health activity.

With reference to the exchange scheme for diagnostic reagents, it was considered that the most important antigens were those prepared from the viruses of psittacosis, Q fever, and tick-borne encephalitis, the preparation of which entails certain risks and should only be carried out by trained personnel in well-equipped laboratories. At least one laboratory had been found which was willing to supply large quantities of each of these antigens. With regard to payment, it was pointed out that only WHO Headquarters and not the Regional Office could provide grants for the preparation of antigens, and it was unanimously agreed that, in general, countries should be prepared to pay for their requirements at an economic rate and make their own arrangements for supplies. Countries which found it impossible to obtain reagents should make specific requests to the Regional Office for assistance—for instance, the provision of fellowships for the study of production methods. Apart from the three antigens mentioned above, most antigens in common use for laboratory diagnosis are prepared with comparative ease and safety. Several laboratories are probably in a position to supply small quantities of these, and it was suggested that the present free exchanges on a personal basis should continue. The Regional Office was asked to prepare a list of laboratories willing to provide laboratory reagents, with the conditions under which supplies would be made.

Other topics discussed by the Advisory Group included the training of personnel for work in public health laboratories. It was agreed that it would be useful if the Regional Office would obtain from Member States information on the post-graduate training facilities available in each country and circulate it to all Member States. It was recommended that the WHO fellowships scheme should be extended where necessary and the

[3] *Wld Hlth Org. techn. Rep. Ser.*, 1957, 128, 6

direct exchange of laboratory workers between Member States encouraged. A further recommendation was that the Regional Office should collect from the national public health laboratory services lists of the most important periodicals in which their findings are published and lists of the titles of papers published by members of the services. These lists should be circulated to the various laboratories.

TEACHING OF PAEDIATRICS IN EUROPE

It is some 60 years since the teaching of paediatrics as a separate branch of medicine began in Europe. Since then its importance has greatly increased, though not to the same extent as in certain other parts of the world where it is now a major subject on the medical curriculum, on the same level as internal medicine. Moreover, there are wide variations in the range and quality of instruction given at the different paediatric centres. WHO accordingly invited the Executive Board of the International Paediatric Association to co-operate in a study of paediatric teaching in Europe. This joint study was recently published[1] *and its main findings are summarized below.*[2]

The study is based on replies to a questionnaire sent out by WHO and the International Paediatric Association (IPA) and on data collected at paediatric teaching centres by a WHO consultant, Professor G. M. H. Veeneklaas, Director of the Department of Paediatrics, University Hospital, Leiden, the Netherlands. The text of the study was discussed by representatives of WHO, IPA and the countries which provided data, and was revised by a committee appointed by them.

It is estimated that there are some 160 paediatric teaching centres in Europe. As funds for the study were limited, it was decided that visits by the WHO consultant should be confined to between two and four representative centres in each of the countries covered, and that he should spend an average of one day at each centre. The visits were made during 1955 and 1956 and covered 68 paediatric teaching centres in the following 18 countries: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and Yugoslavia. The WHO consultant discussed the contents of the WHO/IPA questionnaire with the heads of the centres visited, and saw the teaching hospitals.

Types of centre

Paediatric teaching centres in Europe are of three main types: (*a*) attached to an independent children's hospital; (*b*) attached to a general teaching hospital; and (*c*) housed in a separate building belonging to a group of teaching hospitals.

In the independent children's hospital, there is an ever-present awareness of the needs of the child as such, and this creates the most favourable atmosphere for paediatric training. In the paediatric department of a general hospital, this advantage is lost, but contact with other branches of medicine is closer. The third type of centre, which is by far the most common, tends to take after the first or the second type depending chiefly on its distance from the other teaching hospitals.

Undergraduate training in paediatrics

Undergraduate medical courses in the countries surveyed vary in length from 6 to 8 years. Paediatric instruction is generally

[1] Veeneklaas, G. M. H. (1957) *Paediatric education in Europe.* In: *Helv. paediat. Acta*, 12, Suppl. VII (Fasc. 5)

[2] For a review of paediatric teaching in the Americas, see *Chron. Wld Hlth Org.*, 1958, 12, 195.

provided during the last 2 or 3 years, which are devoted mainly to clinical work. In the southern and central European countries, this instruction usually takes the form of lectures with patient-demonstrations; in the more northerly parts of Europe, it often consists of a few months' clerkship [3] during which some lectures are given.

In general, the clerkship system appears to be more satisfactory than the lecture system. It is, however, unsuited to countries where students are many and teachers are few. A clerkship in paediatrics was found to be compulsory or customary for medical students in Finland, the Netherlands, Norway, Sweden and the United Kingdom. This type of training is taken by a minority of students in Belgium, Germany and Switzerland, and is about to be introduced in France, Spain and Portugal.

A third system, little practiced in Europe, combines features of both the others. This is the system of group discussion whereby students are taught in small groups and take an active part in discussing and dealing with the problems that arise in the course of their hospital work. An approach to this system is found in France where students are taught in groups during the period of clinical training, though instruction is mainly in the form of lectures with patient-demonstrations and the groups are quite large.

Specialized post-graduate training

The number of graduates training as paediatricians varies greatly from country to country. In northern Europe, there are only a few post-graduate students at each centre; at the average southern European centre, there are between 30 and 50. One reason for this is that in, for example, the United Kingdom, there is little scope for the paediatric specialist except as a hospital consultant, and the number of such posts is limited. On the other hand, in Italy, where the undergraduate medical course is mainly theoretical, the private practitioner with in-service training in a specialized branch is at an advantage.

The duration of post-graduate paediatric training ranges from between 7 and 10 years in the United Kingdom to 2 years in Italy. The average for Europe is between 3 and 4 years. Full-time training is usual in the northern and central European countries, and part-time training in the others.

The type of basic training given to future paediatricians varies little from country to country, since it usually consists of work with both in- and out-patients at university hospitals, all of which employ the same internationally accepted methods of treatment and examination. However, in many cases, the range of instruction should be extended to include, for example, practical experience of laboratory and X-ray work. Too much stress is usually laid on clinical paediatrics and not enough on the broader aspects of child care, co-operation with child guidance and child psychiatry services being particularly undeveloped. While opportunities for paediatric research are given in a number of centres, the over-all picture in this respect is far from satisfactory. Another shortcoming is that facilities for training in paediatric surgery, in work with newborn and premature children, and in the care of communicable-disease cases are often not available in or near the teaching centres.

On qualification, the paediatrician is faced with three possibilities: a hospital position, private practice and work as a child health officer. In general, the first choice is private practice, except in the Netherlands, the Scandinavian countries and the United Kingdom, where hospital positions are the rule. In many countries paediatricians combine child health work with their other activities, but there is often a tendency—e.g., in Germany and the United Kingdom—to treat paediatrics and child health work as two distinct branches, to the disadvantage of both.

Other post-graduate training

Post-graduate paediatric courses for general practitioners and refresher courses for qua-

[3] A " clerkship " in paediatrics is a period of practical training, during which the student is usually attached to a paediatric department in a hospital.

lified paediatricians are almost unknown in Europe. One centre in the United Kingdom and two in Yugoslavia, however, provide regular 3-month post-graduate courses in paediatrics, comprising lectures, discussions and practical work in hospital wards and out-patient departments. In both countries, the courses are taken by general practitioners, child health officers and qualified paediatricians.

Teachers

While it is desirable that the teaching of paediatrics should be a full-time job, the professor of paediatrics in Europe usually has so many commitments—e.g., organization, administration, research—that it is impossible for him to concentrate on teaching. This difficulty may be overcome by providing each full-time professor of paediatrics with a sufficient number of qualified staff-members to take over the administrative side of his work. A start has already been made in this direction, notably in the United Kingdom.

Assistance with the actual teaching is also necessary, and this can be provided in various ways. In France, for example, part-time teaching assistants give bedside lectures in the mornings and do private work in the afternoons; in Germany, full-time assistants teach both undergraduates and trainee paediatricians.

Paediatric nurses

Most European countries provide training in child nursing, and in many of them special paediatric courses are available for qualified nurses. The paediatric centres of northern and central Europe are generally well staffed, but the shortage of paediatric nurses in southern Europe is sometimes acute. It was observed that, in a number of paediatric centres, the work of the nurses does not receive due recognition and that co-operation between nurses and doctors could be improved.

Conclusions

An analysis of the data collected on the equipment, staff and facilities of the 68 centres covered by the study showed that at least half of them are inadequate for their purpose. Many of their shortcomings are due to social, economic and historical factors, and cannot be easily or quickly remedied. Others, however, are dependent on the selection and training of personnel, and these should be dealt with first of all. It is recommended that particular attention be paid to the development of paediatric research and co-operation with child health services.

Infant nutrition in the tropics

" This is another major medical product of international effort. From his own extensive experience and direct association with other experts and their warm-climate problems, Dr. Jelliffe has compiled an authoritative and fascinating account * of the nutritional disorders affecting large segments of the world's younger population . . . No one in public health—particularly in ' MCH '—can afford to miss this illuminating exposition of problems generic to the entire field. Pediatricians and those in general medicine will be equally rewarded for exploring major segments of this genuine contribution."

Robert W. Hillman in *Medical Times*, 1957, **85**, 225

* *Infant nutrition in the subtropics and tropics*, by D. B. Jelliffe. (*World Health Organization : Monograph Series*, No. 29). Price: £1 5s., $5.00, or Sw. fr. 15.—(clothbound).

DENTAL HEALTH SERVICES FOR CHILDREN

Diseases of the teeth and the supporting tissues are among the most widespread causes of ill-health. While the prevention and treatment of these diseases should obviously start in childhood, few countries as yet provide adequate dental health services for children. A Study Group on Dental Health Services for Children, sponsored by the Belgian Government and the WHO Regional Office for Europe, met in Brussels from 3 to 7 February 1958 to make suggestions for the improvement of existing services in Europe and the development of new ones.[1] The article that follows is a summary of the main points in the Study Group's report.[2]

Prevalence surveys and periodic inspection

As a preliminary to planning a dental health programme for children, a survey should be carried out to determine the prevalence of dental disease among children of various age-groups in the area where the programme is to operate. This will permit an estimate of the number of personnel required and the approximate cost. The Study Group recommended that the formula " DMF(T) "—number of decayed, missing and filled permanent teeth—be used in recording data. For deciduous teeth, the formula " def "—decayed, filled or indicated for extraction—can be used.

In the course of the programme, there should be an inspection at least once a year—ideally, every six months—to determine the increment of dental disease in the group originally examined. A record should be kept of the age and sex of each child, the clinical condition of the teeth and supporting tissues, the orthodontic condition, and treatment given. The Group considered that a uniform system of individual record cards along these lines should be adopted internationally.

One reason for the present lack of uniformity in data on dental disease is that there is no generally recognized definition of dental caries. The Group suggested the following: " Dental caries may be defined as a defect in the tooth surface that can be clinically diagnosed by the use of a sharp probe and a mouth mirror, and which exists in the enamel or in the enamel and dentine."

Type and scope of services

Various methods of providing dental care for children have been adopted in urban areas. In some cases, large central clinics provide special treatment as well as routine dental care. Elsewhere, central clinics may be reserved for special treatment, routine care being given at small clinics on school premises or at health centres.

The provision of dental care for children in rural areas is a much more difficult matter. The Group considered that the best solution to this problem is to have fixed or mobile clinics in or near school buildings. Both in urban and rural areas, the services of the private dental practitioner are always valuable and, in some cases, indispensable. For any new programme, however, the clinic system should be adopted.

In countries with a sufficient number of dentists and adequate financial resources, dental health services for children should aim at providing—in addition to complete normal dental care—special care for the handicapped

[1] The participants in the meeting were: Dr M. Th. Degard-Bodson, Belgium; Dr Zivko Bolf, Yugoslavia; Dr Harry W. Bruce, jr, USA (Consultant); Dr Tihomir Burkov, Bulgaria; Dr M. Dechaume, France; Dr J. Feitsma, Netherlands; Dr H. Freihofer, Switzerland; Dr S. Hautrive, Belgium; Dr M. Joachim, Belgium; Dr G. H. Leatherman, United Kingdom; Dr D. Macleod, United Kingdom; Dr S. MacNeill, Ireland; Dr. W. Nastrucci, Italy; Professor J. J. Holst, Denmark; Dr Olof K. Osvald, Sweden (Rapporteur); Dr Jacob Ramm, Norway; Dr V. Rudko, USSR; Dr W. G. Senior, United Kingdom (Chairman); Professor Dinko Stranski, Bulgaria; Dr Aino Yliruokanen, Finland. WHO was represented by: Dr E. Poulton, WHO Regional Office for Europe; Mrs R. Repond, WHO Headquarters; Dr C. L. Sebelius, WHO Headquarters.

[2] A limited number of copies of this report are available from the WHO Regional Office for Europe, Copenhagen.

(e.g., children with orthopaedic disabilities), the correction of malocclusion of the teeth and jaws, and treatment for cases with cleft lip and cleft palate. The programme should also cover pre-school children and expectant and nursing mothers, and should include preventive measures and dental health education.

Unfortunately few countries have sufficient resources for a programme of this type. Where there is a shortage of trained staff and finances are limited, the programme should concentrate on children cutting their first permanent molars, i.e., the 6-year-old group. Older children should come next, followed—when resources permit—by very young children and expectant or nursing mothers. Priority should be given to preventive measures, the relief of pain and the removal of gross oral sepsis.

The Group considered that, where possible, provision should be made for both general and specialized orthodontic services. The aim of orthodontic treatment in a dental service for children should be to secure a reasonably satisfactory result, rather than perfection in every case.

Preventive measures

The general factors predisposing to diseases of the teeth and supporting structure are believed to be faulty diet and metabolism, as well as certain systemic conditions. Particular attention should be paid to the diet of expectant or nursing mothers; this should be supplemented or fortified if it is unbalanced or if some essential vitamin or trace element is missing.

Local measures of prevention are too numerous to list in detail. The following should, however, be taken into account in a dental health programme for children:

(*a*) *Diet.* Foods which have a detergent action (e.g., apples or celery) are indicated, as well as those which increase the flow of saliva. Any excess of carbohydrates should be avoided.

(*b*) *Oral hygiene.* This includes such measures as the brushing of the teeth, the use of floss silk and, where there are abnormal conditions of the gum, the use of a wooden point or gum stimulator. Periodic visits should be paid to the dentist for the removal of dental plaques, stains and deposits.

(*c*) *Topical applications of fluoride solutions.* These are of proven value in making the teeth more resistant to caries.

The report of the WHO Expert Committee on Water Fluoridation [3] concluded that there was ample evidence to support the belief that this method of prevention renders the teeth more resistant to dental caries, and that its safety as a public health measure has been proved beyond doubt. In the light of these conclusions, the Group considered that, in areas where water-supplies are deficient in fluorides, water fluoridation should be an essential part of programmes of preventive dentistry. Should this measure prove impracticable, fluoride tablets may be used provided they are taken regularly and strictly in the quantity prescribed.

The Group recommended further research on: killing or inhibition of oral bacteria; adjustment of the balance of micro-organisms in the mouth and reduction of the number of caries-producing organisms; neutralization of acids formed in the mouth; the value of toothpastes containing sea-water concentrates, stannous fluorides, ammonia-urea compounds and antibiotics; the value of supplementing the diet with vitamin B_1 and B_2 preparations as well as fluoride compounds; the collagen structure of tooth and bone; and the use of synthetic sugars which are non-fermentable in mouth fluids.

The Group also stressed the importance of preventive orthodontics, i.e., the early recognition and correction of conditions predisposing to malocclusion of the teeth and jaws. For example, the crowding of permanent teeth due to the premature loss of deciduous teeth could in most cases be prevented with little expenditure of time or money. Other examples of preventive orthodontics are the correction of harmful habits such as finger- or thumb-sucking, and the judicious planned extraction of teeth to correct overcrowding.

[3] *Wld Hlth Org. techn. Rep. Ser.*, 1958, 146

Dental health education

Without a well-planned, continuing programme of dental health education, the value of many of the measures advocated by the Group would be lost. For this purpose, all known health education techniques should be employed and an international co-ordinating group might assemble and distribute suitable educational material.

It was felt that private dental practitioners, as well as public dental officers, should play a more important and active part in dental health education. To help them in this task the following facilities might be provided:

(*a*) post-graduate courses, sponsored by organized dental groups, governmental agencies, or educational bodies;

(*b*) regular information bulletins or newsletters from organized dental groups, governmental agencies, or other agencies interested in the subject;

(*c*) workshops, seminars and study groups on educational methods and techniques.

Dental training

While realizing that dental curricula in most countries tend to be overloaded, the Group thought that more attention might be paid to instruction and training in dentistry for children. No specific curriculum was suggested, but it was considered that courses should cover dental health education and preventive services.

THE CHANGING FACE OF POLIOMYELITIS

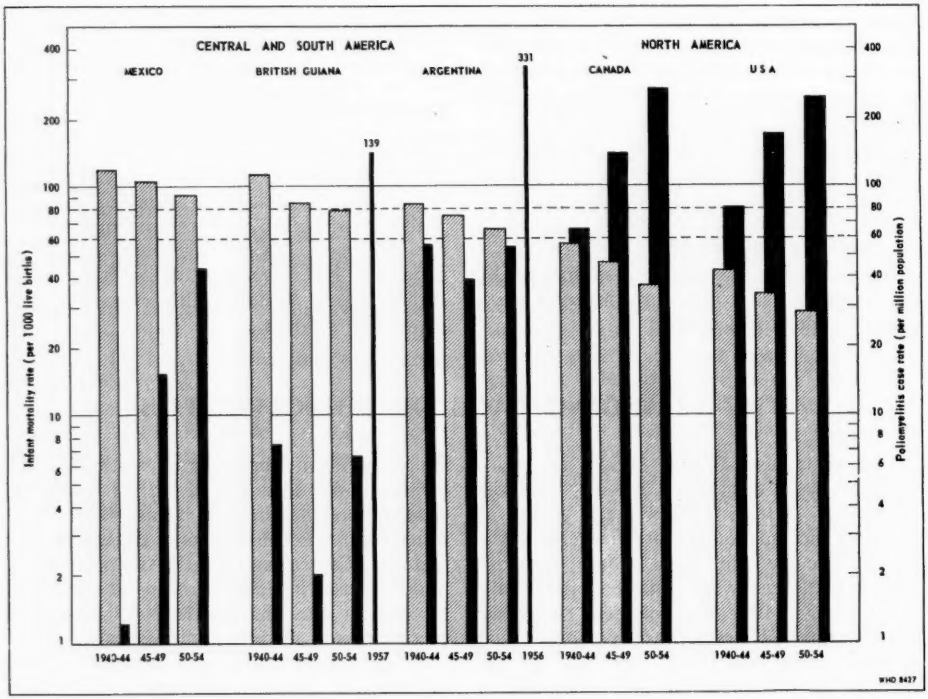
The virus disease now known as poliomyelitis was originally called " infantile paralysis "—a term that for many years was certainly no misnomer, since wherever the disease occurred an overwhelming majority of the sufferers were children under five years of age. Its epidemiological behaviour appeared to be characterized by a low annual recorded case rate (10-20 per million); no records of outbreaks of any size; and a scarcity of adults and even of adolescents among the victims. This state of affairs prevailed until the late nineteenth century, when outbreaks reaching epidemic proportions began to be observed—first in Scandinavia and France, soon afterwards in other parts of Europe and, in the early years of the present century, in North America. These outbreaks were often distinguished by suddenness of onset and a higher proportion of cases over five years of age than had previously been observed in the areas concerned. They were usually followed by a five- to tenfold rise in the five-year-average case rate. So, in some countries, what had hitherto been a sporadic affliction of infants quite soon became an epidemic scourge and a serious public health problem. Not all countries, however, were concerned at that time. While in Europe and North America poliomyelitis was increasing in epidemic severity and tending to attack older and older people, in other parts of the world—for instance, Central and South America, Africa and the Eastern Mediterranean—it continued to present the characteristic old-fashioned picture of so-called " infantile paralysis ".

What brings about the transition from endemic to epidemic poliomyelitis? Is there any means of predicting approximately when it is likely to occur? Neither of these questions can as yet be answered categorically, but a recent study made in Central and South America [1] by J. R. Paul, Professor of Preventive Medicine at the Yale University School of Medicine, New Haven, Conn., USA, has thrown some interesting light on them.

The close association between the increase in poliomyelitis incidence and modern standards of living has been emphasized repeatedly by modern authors, but so far no completely adequate explanation of this phenomenon has been advanced. As Dr Paul points out, it is a highly complex subject and a number

[1] Paul, J. R. (1958) Endemic and epidemic trends of poliomyelitis in Central and South America. *Bull. Wld Hlth Org.*, 19 (In press)

5-YEAR-AVERAGE INFANT MORTALITY RATES (PER 1000 LIVE BIRTHS) AND POLIOMYELITIS RATES (PER MILLION) IN THREE COUNTRIES IN CENTRAL AND SOUTH AMERICA AND TWO IN NORTH AMERICA, 1940-54



Infant mortality rate (5-year average)

Poliomyelitis case rate (5-year average)

Poliomyelitis case rate (for one year)

The horizontal zone outlined by the dotted lines indicates what might be called a "critical infant mortality zone".

of factors may come into play. First, for example, there is the simple fact that hand in hand with higher standards of living goes improvement in case finding and reporting, which naturally leads to an increase in the recorded rate. Secondly, with poliomyelitis, as with several other virus diseases, infantile infections are apt to be the mildest of the clinical forms, so that a very high proportion (over 99%) of infants who become infected with polioviruses fail to develop any symptoms which would attract the attention of physicians—a fact that would account for the low case rate of the *infantile* disease. Thirdly, one of the results of better living conditions is that children who would otherwise have become infected with polioviruses in infancy may reach the age of 8-12 years before being exposed to the infection, with two consequences: (*a*) not having acquired immunity through a subclinical attack early in life, these older children are more likely to develop the severer, readily recognizable forms of the disease when they do eventually

encounter the virus; and (*b*) an increasing proportion of the juvenile population will grow up non-immune and will, so to speak, become riper each year for an epidemic.

Turning then to the second question—can the transition from endemic to epidemic poliomyelitis be predicted in a given country?—Dr Paul explains that a fair idea of when it is likely to occur can be obtained from a study of the infant mortality rate, i.e., the number of deaths in the first year of life per 1000 live births. An earlier comparison by Dr A. Payne, Chief of the Endemo-Epidemic Diseases Section at WHO Headquarters, of the infant mortality rates and the poliomyelitis case rates in several European and North American countries over a number of years had revealed the interesting fact that the rates of the disease usually increased as the infant mortality rate decreased, and that the primary explosive outbreaks of the disease often occurred soon after the infant mortality rate had fallen to below 75. Dr Paul has examined the corresponding rates and epidemic incidents for certain Central and South American countries, where the transition has only comparatively recently been observed, and has found that, by and large, the inverse ratio between infant mortality rates and poliomyelitis case rates is holding there also (except in the island communities, where the polioviruses are presumably less easily introduced). The recent epidemic episodes in these countries have more often than not been associated with an infant mortality rate of between 60 and 80, and the author therefore feels that a watchful eye should be kept on the poliomyelitis case rate in any country once the infant mortality rate has fallen within this range, since a sudden and devastating upsurge of the disease may be about to occur—an upsurge that could probably be prevented by starting a vaccination campaign at the first signs of a significant rise in the case rate.

HOOKWORM DISEASE IN SYRIA

In several of the countries of the Eastern Mediterranean area, ancylostomiasis (hookworm disease) is a serious threat to public health—among the helminth diseases second in importance only to bilharziasis. Particularly heavy infestations occur in some parts of Syria, mainly in the coastal strip and along the banks of the Orontes and the Euphrates.

The disease saps the vitality and affects the health of whole communities; it also predisposes to other serious diseases, such as tuberculosis. Intestinal haemorrhage leads to a microcytic, hypochromic anaemia, which may be very severe, with a haemoglobin level below 30% and a red cell count of 2 million per mm^3 or less. Such cases usually occur in poor, undernourished communities, and the impaired working capacity still further increases the poverty. It is therefore important to map out the areas of high endemicity and to decide what measures can be taken to combat the spread of the disease.

In October 1955, the WHO Regional Office for the Eastern Mediterranean requested Dr. H. F. Nagaty, Professor of Parasitology at the Ein Shams University, Cairo, to undertake a survey of ancylostomiasis in Syria. The following is a brief summary of his methods and findings, which have already been published in detail elsewhere.[1]

Methods

Investigations were carried out in all nine governorates of Syria, as well as at El Kayem in Iraq, a few miles from the Syrian frontier. There is frequent traffic across the frontier in this area, which adjoins Deir Ez Zor Governorate where hookworm infestation is particularly heavy, and it was thought that similar conditions might exist in the El Kayem district of Iraq. In fact, 59% of the boys and 27% of the girls at two local schools were found to have ancylostomiasis.

Altogether examinations were carried out on 4211 persons, rather less than 20% of the

[1] Nagaty, H. F. (1957) *Bull. clin. sci. Soc. Abassia Fac. Med.* 8, 83

population of the villages surveyed and about 0.1% of the total population of Syria. As the men were usually scattered in the fields during the day, they could not easily be reached. Even when found, they generally refused a stool sample on some pretext or other. The women could not be asked in deference to local customs. Dr Nagaty therefore confined his investigations almost entirely to schoolchildren, who were easily accessible and from whom, with the help of the schoolmasters, the necessary samples and data could be obtained in a short time. Children are also a very sensitive index of the presence of helminthiasis in a community, as they are careless in their habits and less resistant to the parasites.

Stools were examined by the direct smear method, two smears being made on each slide. One smear was emulsified with water and the other with iodine solution. Another smear was prepared by the Erlenmeyer floatation method using filtered, concentrated salt solution. Towards the end of the survey, which lasted altogether three months, the direct smear method was abandoned and only the floatation method used. Stoll egg counts for *Ancylostoma* were made in some cases in endemic zones to give an idea of the intensity of infestation. A search was also made for other helminths, and occasionally for protozoa. At Deir Ez Zor, some of the boys with ancylostomiasis were subjected to a more thorough investigation in hospital, including differential blood counts. The worms were collected and identified as *Ancylostoma duodenale*. Treatment was given with tetrachlorethylene.

Results

The most prevalent worm disease was ascariasis, which was found in 46% of all subjects examined. Ancylostomiasis came next in importance, with an attack rate of 24%. The highest rates for this disease were found in Deir Ez Zor Governorate, where the average rate for the whole territory was 47%. In many of the schools, however, 85-100% of the children were suffering from hookworm disease. The infested villages were found along both banks of the River Euphrates. The only other area where ancylostomiasis was prevalent was Hama Governorate, with an over-all rate of 43%, but the disease was restricted mainly to two villages on the banks of the River Assi. The governorates of Hasaka and Aleppo had attack rates of 3% and 2% respectively, while no cases at all were found in any of the remaining five governorates.

Other fairly common helminths were *Trichocephalus* (19%), *Hymenolepis nana* (11%) and *Trichostrongylus* (4%). Infestation with *Trichostrongylus* was particularly prevalent in Deir Ez Zor Governorate, where as many as 43% of the inhabitants of one village were affected. Some 45% of the subjects examined were infested with one species of parasite only, 26% with two species, 5% with three species, and 0.5% with four or more species. Only about a quarter of those examined were found to be free from worms.

Discussion

Hookworm disease occurs only in areas where no proper latrine facilities are provided and where people habitually go about barefoot. This is the case in most of the rural areas of Syria—and 75% of the population live in rural districts. The villages are scattered over wide areas and the houses are without latrines of any sort. The schools, too, are very often without latrine facilities. Defecation and urination take place in open fields. Most of the villagers go about barefoot, although children usually wear some kind of footwear to school. The warm, moist conditions found in Deir Ez Zor and Hama Governorates are particularly favourable to the development of the hookworm larvae. Although these governorates do not have much shade, and direct sunlight is inimical to the development of the larvae, the people usually seek out a fairly shaded, secluded spot for defecation.

A simple measure that would control the spread of hookworm disease would be the compulsory wearing of sandals or some other form of shoe out of doors. Apparently a law to this effect does exist in Deir Ez

Zor Governorate, but it is not enforced. Apart from protection of the feet, attention should also be given to preventing the continuous pollution of the soil by providing all houses and schools with latrines. Where such a measure would be too expensive, public latrines might be a satisfactory alternative. Dr Nagaty considers that disinfection of faeces or soil is too difficult and expensive to be applied over large areas.

Besides these hygienic precautions, mass treatment of the entire population should be carried out in areas where an appreciable number of cases have been detected, all members of the community being treated within a short period of time. With modern drugs it is possible not only to give immediate relief to the patient, but also to reduce the number of eggs reaching the soil and thus cut down the rate of reinfestation. Nevertheless, since some reinfestation does occur and a single treatment is scarcely ever sufficient to eliminate all the worms, it is necessary to repeat the treatment at suitable intervals. Supplementing the diet with additional proteins and with iron is in itself sufficient to reduce the severity of symptoms and to enable the patient to build up a resistance by increasing the production of gamma globulin.

Wherever financial resources permit, these measures should be applied simultaneously. At the same time efforts should be made to improve the living standards of the population, particularly with regard to sanitation, and to educate the public by means of extensive health propaganda. Finally, Dr Nagaty emphasizes the need for strengthening the health services, including the school medical services.

Epidemiological and Statistical Information

RECENT DATA ON MORTALITY FROM ALCOHOLISM

Although it is well known that alcoholism constitutes a serious public health problem, it is almost impossible to discover its exact magnitude by means of vital statistics. Even in the most highly developed countries, morbidity statistics on a nation-wide basis are practically non-existent, but at best they could only be of limited value when applied to alcoholism.

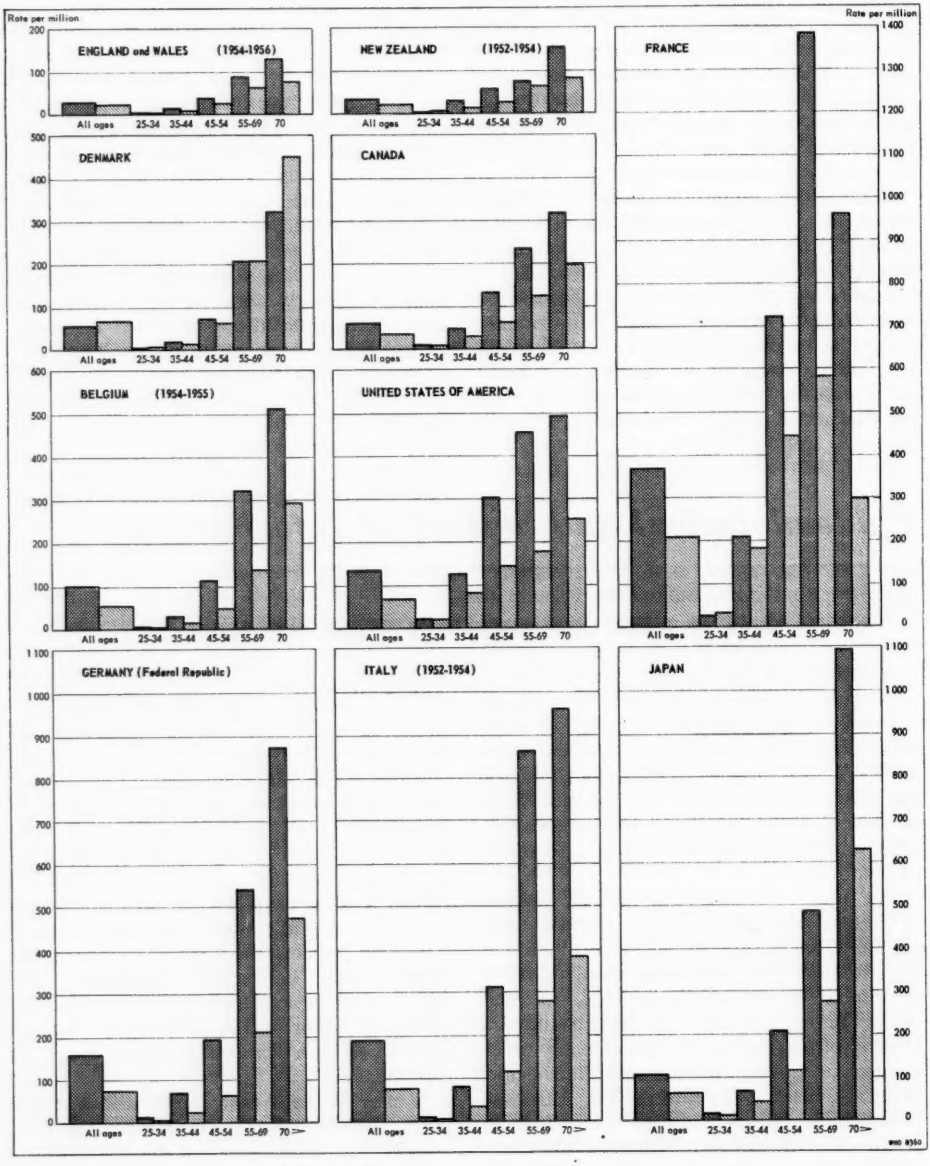
The only statistical data on the subject at present available relate to mortality and are far from giving an accurate picture of the situation. The number of deaths directly attributed to alcoholism cannot, in fact, reflect the true mortality, for the consumption of alcohol may be at the root of many other diseases or violent deaths (accidents, suicide, homicide, etc.). Following the rules of classification, it is generally these diseases or causes of violent death that are taken into account for the purpose of mortality statistics, alcoholism being considered only as a contributory factor. To be of real value, the statistics must include the number of deaths to which alcoholism is a contributory factor, as well as the number of deaths of which it is the primary cause.

The data on alcoholism recently published by WHO in its *Epidemiological and Vital Statistics Report* [1] must therefore be considered only as a rough guide; they do not permit comparisons to be made between one country and another but are useful in that they indicate the general trends during recent years in certain countries. The figures are supplemented by data concerning mortality from cirrhosis of the liver—a disease which is, of course, often related to alcoholism.

It may be said that during the last few years the mortality from alcoholism (i.e.,

[1] *Epidem. vital Statist. Rep.*, 1958, **11**, No. 4. See also *Epidem. vital Statist. Rep.*, 1956, **9**, No. 3.

MORTALITY RATES (PER MILLION) FROM CIRRHOSIS OF THE LIVER IN CERTAIN COUNTRIES, BY SEX AND AGE-GROUP, 1953-1955 *



* Except where otherwise stated

alcoholism properly so-called and alcoholic psychosis) has remained more or less stationary in most countries. In France, however, a continual rise was noted (from 6.2 per 100 000 inhabitants in 1950-1952 to 10.6 in 1955), while in the United States the rate has constantly declined (from 1.7 per 100 000 inhabitants in 1950-1952 to 1.3 in 1955). On the other hand, deaths from cirrhosis of the liver (with or without mention of alcoholism) have tended to increase. In France, for example, mortality from this disease rose from 19.7 per 100 000 inhabitants in 1950-1952 to 31.9 in 1956. Austria, Belgium, Germany, Japan, Portugal and the United States are among the countries in which a similar increase has been noted, although the respective rates vary widely. Mortality is considerably higher among men than among women (three to four times as high with respect to alcoholism and about twice as high for cirrhosis).

Deaths from alcoholism and cirrhosis are mainly in the older age-groups. Mortality from alcoholism is highest between the ages of 40 and 69, after which it decreases slightly; mortality from cirrhosis of the liver increases gradually with age, the highest rates being reached above 65 or 70 years.

The accompanying figure shows mortality rates from cirrhosis of the liver in various countries, by sex and age-group. It should be noted that mortality from cirrhosis generally accounts for something like 70-80% of all deaths reported for cirrhosis of the liver and alcoholism together.

Notes and News

Difficulties in the use of DDT wettable powder

In April of this year, it was reported from Iran that large quantities of DDT wettable powder received there appeared to be far below WHO specifications. The material was lumpy, failed to suspend easily, and tended to clog up the sprayers. Specimens sent to New York for testing were, however, found to comply fully with WHO specifications. Two experts—one from UNICEF, which had supplied the powder, and one from WHO—accordingly went to Iran to investigate the matter on the spot.

It was found that, although the powder met WHO specifications, precautions had to be taken in preparing the suspension. The tendency to lump was due to two factors: (i) a reduction in the amount of anti-caking agency in the formula; (ii) the removal of most of the air from the material as a result of vacuum packing.

Thus, the fact that certain batches of DDT water-dispersable powder contain lumps and suspend less easily than others does not necessarily mean that they are of inferior quality. The lumps can be broken up fairly easily by hand (rubber gloves should be worn), or with a flat paddle; if they are allowed to stand in water for about an hour before final dilution, they will break up of their own accord. Spraymen should always be reminded to shake the compression sprayer frequently to keep the wettable powder in uniform suspension.

Non-proprietary names for pharmaceutical preparations

The increasing number of new pharmaceutical preparations put on the market every year creates many problems. National drug control authorities, laboratories, and research workers dealing with the examination and testing of new drugs should have the necessary specifications as soon as possible, together with other information which will permit the classification of these drugs for distribution and sale. When the chemical formula of a preparation is too complicated, there is also need for a shorter designation preferably formed by a combination of syllables indicating the significant chemical groupings of the compound, or its pharmacological classification, or both.

In accordance with its Procedure for the Selection of Recommended International Non-Proprietary Names for Pharmaceutical Preparations,[1] WHO has already proposed 628 non-proprietary names for important new medicinal substances, with the co-operation of national authorities and manufacturers in a number of countries. The Sub-Committee on Non-Proprietary Names of the WHO Expert Advisory Panel on the International Pharmacopoeia and Pharmaceutical Preparations met at the end of September to examine and propose names for a number of recently introduced pharmaceutical preparations. Objections to names formerly proposed were considered, as well as suggestions from national authorities and manufacturers for amendments to the General Principles for Guidance in Devising International Non-Proprietary Names,[2] adopted by WHO.

The names proposed by WHO are finding acceptance in a large number of countries. Six lists of proposed international non-proprietary names have been published by the Organization,[3] and a further list is expected to appear shortly.

The following experts were invited to take part in the meeting of the Sub-Committee on Non-Proprietary Names: Professor H. Baggesgaard Rasmussen (Denmark), Mr T. C. Denston (United Kingdom), Professor R. Hazard (France), Professor Eugenio Sellés (Spain), Dr R. T. Stormont (USA), Professor V. Zakusov (USSR). Mr P. Blanc (WHO) acted as Secretary to the Sub-Committee.

Cholera and yellow fever vaccines

The WHO Study Group on Recommended Requirements for Biological Substances, which met in Geneva from 1 to 6 September, has formulated requirements for cholera and yellow fever vaccines. These recommended requirements deal with control measures during manufacture, as well as tests of the finished products, and contain technical descriptions of recommended methods of assay. If the requirements for cholera vaccine are widely adopted, the exchange of cholera vaccines between different countries will be greatly facilitated.

The UNRRA Standards for the Manufacture and Control of Yellow Fever Vaccine have been in operation since 1945. In 1957, the WHO Expert Committee on Yellow Fever Vaccine proposed revised manufacturing and testing requirements;[4] these have been used by the Study Group as the basis for its recommendations.

The following experts were invited to take part in the meeting of the Study Group: Dr M. L. Ahuja (India), Dr J. Gallut (France), Dr D. C. Lahiri (India), Dr O. Maaløe (Denmark), Dr F. N. Macnamara (Nigeria), Dr R. Panthier (France), Dr W. L. M. Perry (United Kingdom), Dr Margaret Pittman (USA), Dr V. L. Troitzsky (USSR), Dr J. Wolff (Netherlands). Dr N. K. Jerne (WHO) acted as Secretary to the Study Group.

Joint WHO/FAO Expert Committee on Zoonoses

The report of the Joint WHO/FAO Expert Group on Zoonoses, which appeared in 1951,[5] dealt in detail with bovine tuberculosis, anthrax, psittacosis, hydatidosis and Q fever. The Joint WHO/FAO Expert Committee on Zoonoses met in Stockholm, in August, to review advances in knowledge of these diseases since the publication of the Expert Group's report, and to discuss several other zoonoses. The following aspects of salmonellosis were considered: animal reservoirs, the epidemiology and control of food-borne salmonelloses, and the role of the WHO Salmonella Centres. The epidemiology of leptospirosis and the classification of *Leptospira* organisms were also discussed. The Committee considered the revision of the list of zoonoses published in the report of the Joint WHO/FAO Expert Group on Zoonoses, and, in a joint meeting with the WHO Expert Committee on Respiratory Virus Diseases, reviewed the part played by animals in the epidemiology of influenza.

[1] See *Chron. Wld Hlth Org.*, 1958, **12**, 109.

[2] See *Chron. Wld Hlth Org.*, 1958, **12**, 111.

[3] These lists appeared in *Chron. Wld Hlth Org.*, 1953, **7**, 297; 1954, **8**, 216 and 313; 1956, **10**, 28; 1957, **11**, 231; 1958, **12**, 102.

[4] *Wld Hlth Org. techn. Rep. Ser.*, 1957, **136**

[5] *Wld Hlth Org. techn. Rep. Ser.*, 1951, **40**

The participants in the Expert Committee's meeting were: Professor M. Abdussalam (Pakistan), Dr B. D. Blood (Pan American Zoonoses Center), Dr W. C. Cockburn (United Kingdom), Dr E. C. Chamberlayne (PASB/WHO), Sir Thomas Dalling (FAO), Dr E. A. Eichorn, *Secretary* (FAO), Dr M. M. Kaplan, *Secretary* (WHO), Dr R. M. Mendy, *Vice-Chairman* (Argentina), Dr K. F. Meyer, *Chairman* (USA), Professor J. A. R. Miles, *Vice-Chairman* (New Zealand), Dr J. Müller (Denmark), Professor J. Parnas (Poland), Dr A. W. Stableforth, *Rapporteur* (United Kingdom), Professor K. Wagener (Germany), and Professor J. W. Wolff (Netherlands). Dr J. H. Steele (USA) acted as WHO consultant for the meeting.

Mental health problems of old age

In some of the more highly industrialized countries, increased life expectancy and the reduction in the size of families have greatly complicated the problem of caring for the aged. In particular, there has been an alarming increase in the number of old persons admitted to mental hospitals. With improved standards of living, a similar situation threatens to develop in countries where as yet only a small percentage of the population survives into old age.

The WHO Expert Committee on the Mental Health Problems of Ageing and the Aged met in Geneva, in September, to review the causes and types of mental illness in old age and consider ways of dealing with the problem. The members of the Committee were: Dr E. Braga (Brazil), Professor A. Querido (Netherlands), Dr A. Repond (Switzerland), Dr C. A. Roberts (Canada), Professor Torsten Sjögren (Sweden), Professor A. V. Snezhnevsky (USSR), Dr Tigani el Mahi (Sudan). WHO was represented by Dr E. E. Krapf and Dr Maria Pfister, who acted as Secretary; Professor Martin Roth (United Kingdom) acted as consultant to the Committee.

Accidents in childhood

In many countries, accidents are responsible for more deaths among children over one year old than all other causes of death combined. For each of these accidents that proves fatal, there may be a hundred or so others, many of them resulting in permanent disfigurement or disability. While much has been done towards the prevention of traffic accidents—still the cause of a high proportion of deaths in childhood—less attention has been paid to accidents in the home, which in some countries account for about half the number of accidental deaths and injuries among children. Education, legislation and safety devices are the principal means of preventing accidents. To minimize the effects of those that do occur, efficient first-aid, hospital and rehabilitation services are needed.

A seminar on the prevention of accidents in childhood, sponsored by the WHO Regional Office for Europe and the Belgian Government, was held at Spa, Belgium, in July, to consider these and related problems. The principal subjects discussed were: mortality and morbidity due to childhood accidents in Europe; the relationship of accidents to the nature of the child; safety measures; co-operation between agencies concerned with accident prevention among children; education and publicity; legal, administrative and medical aspects. An exhibition of publicity material and safety devices designed to prevent common childhood accidents was held in connexion with the seminar, and a number of films from the various countries represented were screened for the participants.

Twenty-one European countries were represented at the seminar by experts in a wide variety of fields, including health, police work, education, town planning and public information. Representatives were also present from WHO and from four non-governmental organizations, namely, the Association for the Aid of Crippled Children, the International Children's Centre, the International Federation of Senior Police Officers, and the League of Red Cross Societies.

Susceptibility of insects to insecticides

A seminar on the susceptibility of insects to insecticides was held in Panama, from

23 to 28 June, under the auspices of the Government of Panama and the Pan American Sanitary Bureau (WHO Regional Office for the Americas). There were 83 participants from countries and territories throughout the Region. The topics discussed included the genetic, biochemical and ecological aspects of resistance, and standard methods for testing levels of susceptibility in insects of public health importance.

The report of this seminar, including the papers presented and the full transcript of the discussions, will shortly be issued in mimeographed form by the Pan American Sanitary Bureau.

Regional seminar on leprosy control

The development of the sulfone drugs, which can arrest or retard leprosy in the individual and prevent its transmission to others, has revolutionized the treatment of leprosy and kindled new hope in victims of the disease. One important result of this development is that literally millions of " hidden " cases are coming to light.

Although, generally speaking, leprosy is less prevalent in the Americas than in parts of Asia or Africa, it is an important health problem for a number of countries and territories in the Region. A seminar on leprosy control was held by the Pan American Sanitary Bureau (WHO Regional Office for the Americas) and the Brazilian Government at Belo Horizonte, State of Minas Gerais, Brazil, from 30 June to 7 July. It was attended by some 40 eminent public health workers, including leading authorities on leprosy, from 16 countries and territories in the Region. The purpose of this meeting was: to consider the results of isolation in the control of leprosy, and of newer control methods; to review mass treatment programmes and methods of prevention; and to make recommendations on the organization of mass leprosy programmes and their integration in the public health services. The participants supplied information on the leprosy problem in their respective countries, including data on the geographical distribution of the disease, control measures employed and legislative measures in force.

Health precautions for the Mecca Pilgrimage

Recent smallpox and cholera outbreaks in India, East Pakistan and Thailand have led health authorities in the Eastern Mediterranean Region to strengthen the control measures applied to Mecca pilgrims.[1]

On the occasion of the 1958 Pilgrimage, which ended on 30 June, every pilgrim arriving in Saudi Arabia was required to produce a certificate of double inoculation against cholera (two doses of vaccine administered at an interval of one week). The health authorities of the United Arab Republic notified WHO that, during the Pilgrimage season, all ships and aircraft carrying pilgrims or travellers from Saudi Arabia had to land at El Tor Quarantine Station, while all passengers leaving the Province of Egypt by land or sea for the Hedjaz had to be in possession of valid smallpox and cholera vaccination certificates.

The effectiveness of these and other prophylactic measures has been confirmed by the fact that this year's Pilgrimage was free from pestilential disease. A similar success was recorded last year, when the Mecca Pilgrimage was free from all contagious disease, apart from a few cases of Asian influenza.

Malaria eradication plan for India

The Government of India has decided, in agreement with WHO, to convert its national malaria control programme into an eradication programme, which will be the largest ever undertaken for a single country. Some 230 eradication units—each intended to give protection to a million people—are to start spraying operations this year in all the endemic areas of the country. In 1959 and 1960, these operations will be extended to hypo-endemic areas in which autochthonous transmission of malaria cannot be completely ruled out and where a further 160 million persons will be protected.

It is expected that spraying can be completed by 1961, and the plan provides for

[1] See *Chron. Wld Hlth Org.*, 1957, **11**, 337.

surveillance to be maintained for three years afterwards. During the eradication campaign, each year's progress will be critically reviewed at an annual conference attended by all officers in charge of units.

Cholera outbreak in Nepal

At the request of the Government of Nepal, WHO has supplied 25 000 doses of cholera vaccine to help immunize the population of Khatmandu where an epidemic has broken out. This is the first cholera epidemic to be reported in Nepal since the beginning of the century.

The cholera situation in Asia is the most serious in many years. By the end of July, a total of 48 722 cases and 20 685 deaths had been reported in India, East Pakistan and Thailand, and cases had also been recorded in Cambodia and Burma.[1]

Tuberculosis surveys in Africa

With the co-operation of WHO case-finding teams, surveys are being carried out in various parts of Africa in order to assess the prevalence of tuberculosis and to determine how its prevention and treatment can best be undertaken in the countries and territories concerned. The system used is generally that of random sampling, and the methods of examination include tuberculin testing, sputum examination and, if suitable equipment is available, X-ray examination. The data collected are sent to the WHO Tuberculosis Research Office in Copenhagen for evaluation.

During 1957 and 1958, 4200 persons were examined in Ghana. In Nigeria, the towns of Lagos and Ibadan have been surveyed; in the latter, 1600 people were examined and the survey was continued by a local team after the WHO staff left. In Freetown, Sierra Leone, two groups of schoolchildren and 1500 other inhabitants were examined.

The largest tuberculosis survey in Africa is now taking place in Nairobi, Kenya, where it is planned to examine the whole African population of the town—i.e., between 120 000 and 140 000 people—in the space of two years. Those affected by pulmonary tuberculosis will be treated immediately so as to avoid further contagion. As a preliminary to the mass campaign, a sample of about 12 000 people is being examined in order to assess the prevalence of the disease. To undertake the survey, the Government of Kenya has appointed 2 medical officers, a public health nurse and 35 auxiliaries headed by a supervisor; they will be assisted by a WHO team consisting of 2 medical officers, a laboratory technician, a bacteriologist and a public health nurse. UNICEF is providing X-ray and laboratory equipment, vehicles and drugs to a value of some $147 000.

WHO teams are also carrying out tuberculosis surveys in Uganda and Mauritius, and it is planned to send similar teams to Nigeria, Basutoland and Bechuanaland in the near future.

[1] See also *Chron. Wld Hlth Org.*, 1958, **12**, 210.

People and Places

Organization of medical stores

Although WHO is not a supply organization, it is interested in the proper organization of medical stores and in measures to facilitate the supply of medicines and medical equipment to hospitals and health services. In 1952, WHO sent Mr J. E. Williams, of the United Kingdom, to Ceylon for two years to assist the Government in the organization of a medical supplies service for all hospitals and clinics throughout the country. This service has been functioning ever since, and Mr Williams has just paid a second visit to Ceylon to review its progress.

Mr Williams is Supplies Officer to the United Bristol Hospitals, and a member of the Pharmaceutical Society of Great Britain. In 1957, he served WHO on an assignment to Afghanistan similar to those he has undertaken in Ceylon.

Nutrition and dental health

Several rural communities near Kaohsiung City, Taiwan (China), have been found to be almost completely free from dental disease and deformity, although the fluoride content of their drinking-water is low. In Kaohsiung City itself, however, there is a high prevalence of dental caries.

At the request of the Taiwan Government, a WHO expert—Dr B. Lilienthal—will investigate the relationship between the prevalence of dental disease in the Kaohsiung area and the diet of the inhabitants. Dr Lilienthal is a Senior Research Fellow of the National Health and Medical Research Council of Australia, and is at present working at the Institute of Dental Health in Sydney. He is both a dentist and a biochemist, and has done considerable research in the field of dental caries.

Nursing education in Taiwan

Since 1952, a WHO team has been helping the health authorities of Taiwan (China) to improve their nursing education programme. The team is attached to the National Taiwan University School of Nursing at Taipeh.

The latest member of the WHO team is Miss Helen Fillmore, of the United States, who will assist principally with the teaching of obstetrics and paediatric nursing. Miss Fillmore has had experience as a staff nurse, supervisor and teacher, and has received post-basic training in paediatric nursing and in maternal and child health.

Toxic hazards in spraying programmes

WHO has started an enquiry into the toxic hazards to which spraymen are exposed during dieldrin spraying programmes. In this connexion, Dr Wayland J. Hayes, jr, of the United States, will visit spraying programmes in Africa, India, Indonesia, Iran and Iraq, to study spraymen at work under field conditions, and make recommendations for their future protection.

Dr Hayes is Chief of the Toxicology Section of the Technical Development Laboratories, Communicable Disease Center, US Public Health Service, Savannah, Ga., and has taken part in the work of the WHO Study Group on Toxic Hazards of Pesticides to Man.

Health statistics unit in India

A demonstration and training unit in health statistics was established in Nagpur, India, with WHO assistance, in March 1956. Its aim is to show how statistics can help health departments in their work, and to serve as a training centre for health statisticians.

Dr Wallis Taylor, of the United Kingdom, is at present in Nagpur as WHO statistician with the task of advising on the work of the unit. A graduate of the London School of Economics, Dr Taylor has been Lecturer in Economic and Social Statistics at the University of Exeter, England, since 1955.

WHO Headquarters

Dr A. W. A. Brown, Biologist, Division of Environmental Sanitation, has returned to Canada to resume his post as Head of the Department of Zoology, University of Western Ontario.

During his two years' service with WHO, Dr Brown contributed to the development of co-ordinated worldwide research on insecticide resistance, collecting and circulating information on the subject from 135 laboratories and almost 450 scientific workers. He also established standard methods for testing the insecticide-susceptibility levels of adult and larval mosquitos. Dr Brown's monograph *Insecticide Resistance in Arthropods*, published by WHO early this year,[1] is probably the most thorough survey of the insecticide-resistance problem that has yet been made.

Dr Brown's successor is Dr Don W. Micks, who has been granted a one-year leave of absence from his post as Assistant Professor of Medical Entomology at the University of Texas Medical Branch. Dr Micks obtained his B.Sc. and M.Sc. degrees at North Texas State College, subsequently studying at the Johns Hopkins University School of Hygiene and Public Health, where he took his Sc. D. in parasitology, specializing in medical entomology. For the academic year 1953/54, he was granted a Fulbright Research Award to the Istituto di Zoologia, Università di Pavia, Italy, where he studied the *Anopheles maculipennis* complex of Europe from the biochemical point of view. After his year at WHO Headquarters, Dr Micks will return to the University of Texas Medical Branch as Professor of Medical Entomology.

[1] *Wld Hlth Org. Monogr. Ser.*, 1958, No. 38

Review of WHO Publications

Bulletin of the World Health Organization, 1958, Volume 19, Number 2 (pages 223-400)

In the third and last part of their report on the WHO-assisted pilot project for the control of bilharziasis japonica in the Philippines, T. P. Pesigan and co-workers deal with control measures employed in Leyte Province where the terrain is unsuitable for the application of molluscicides. These included the removal of vegetation in and around infested streams, drainage of waterlogged areas, the filling or flooding of low-lying areas, and the digging of fishponds in sluggish streams. Experiments carried out in rice-fields harbouring large numbers of snails showed that improvements in rice-growing methods markedly reduce the snail population, as well as increasing the rice yield. The role of sanitation in the control of bilharziasis is also discussed.

H. van der Schalie describes a pilot study in the control of the snail vectors of bilharziasis which was carried out in Qalyub, Egypt, in 1953-54. Although the area selected for the study was thoroughly surveyed and treated with copper sulfate, the snails were not completely eliminated. Moreover, the high cost of copper sulfate would preclude its widespread and continual use as a molluscicide. Nevertheless, until long-term bilharziasis control measures—such as improved sanitation, better treatment facilities and health education—can be perfected, the author considers that snail control is of the first importance, and that determined efforts should be made to find cheaper and better means of effecting it.

P. Antonipulle, H. V. David and M. D. R. Karunaratne contribute a paper on *Taeniorhynchus (Mansonoides) uniformis*, the chief vector of rural filariasis in Ceylon. To control this mosquito, residual spraying of DDT was carried out in a village on the west coast of Ceylon; it was found that the insecticide retained its effectiveness for 4-6 months. The paper includes observations on the behaviour of the mosquito.

The next paper, by E. Mosna, L. Rivosecchi and K. R. S. Ascher, gives the results of a cytological examination of the larvae of a normally susceptible and a dieldrin-selected strain of *Anopheles atroparvus*, both laboratory-reared. A very high proportion (77.4%) of heterozygous inversions was observed in the larvae of the 28th generation of the dieldrin-resistant strain, whereas the proportion in the normally susceptible strain was only 20.8%.

D. S. McLaren has made an extensive study of the literature on protein malnutrition, with special reference to the frequency of involvement of the eyes. He reviews the available evidence, which suggests that this important complication is nearly always the result of an accompanying vitamin-A deficiency.[1]

R. R. Puffer and L. J. Verhoestraete contribute a preliminary analysis of data on mortality from cardiovascular diseases in various countries. Wide geographical variations are noted, and it is suggested that there is room for improvement in the recording and interpretation of statistics on cardiovascular mortality.

An international collaborative assay of material for the Third International Standard for Oxytoxic, Vasopressor and Antidiuretic Substances is described by D. R. Bangham and M. V. Mussett. It has been decided that the potency of the new Standard should be expressed as 2.0 International Units per milligram.

W. H. A. Schöttler describes an investigation into the possibility of supplying stable, consistent and reproducible batches of snake venom for adoption as international reference preparations for antivenin sera. Experiments with venom samples from the South American

[1] A summary of this paper appeared in *Chron. Wld Hlth Org.*, 1958, 12, 138.

snake *Bothrups jararaca* showed that the toxic potency of venom samples from snakes of the same species collected in different localities may vary significantly. The author concludes that stable and unvarying batches of venom can probably be obtained only from snakes bred and kept in captivity under constant environmental conditions.

Taking recent trends in England and Wales as his starting point, G. Tooth writes on the place of the psychiatric hospital in a mental health service.[1]

Finally, there is a bibliography covering literature published in 1957 on the toxicity of pesticides to man and animals. This is the second annual supplement to the bibliography published in Vol. 16, No. 6 of the Bulletin. The first annual supplement appeared in Vol. 17, No. 3.

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VENEREAL INFECTIONS AND TREPONEMATOSES

Bulletin of the World Health Organization, 1958, Volume 19, Number 3 (pages 401-588)

At the end of the Second World War, the prospects for controlling venereal disease and the allied treponematoses with penicillin seemed remarkably good, and, indeed, improved almost annually as new preparations were developed permitting easier administration and longer effective retention in the circulation. The opportunity was seized by public health authorities the world over, and mass treatment campaigns which were undertaken in areas where such infections were endemic met—and are still meeting—with a success undreamt of fifteen or twenty years ago. Endemic syphilis, bejel, njovera, dichuchwa, yaws, and pinta have all responded to treatment, as have countless cases of sporadic syphilis and gonorrhoea.

However, while the treponeme continues to show an apparently unabated sensitivity to penicillin and the world reservoir of syphilis has shrunk dramatically over the last decade, two phenomena have occurred which are causing some anxiety—the increasing number of severe reactions following penicillin administration and the apparently reduced sensitivity of the gonococcus to that drug. It therefore seemed opportune to present, in this issue of the Bulletin, an up-to-date review of the situation, prepared by T. Guthe, O. Idsöe & R. R. Willcox, so that public health authorities and others might have to hand as complete as possible a compendium of knowledge on which to base their policies.[2]

The advent of penicillin was particularly propitious for the treatment of gonorrhoea, for the sulfonamides on which such hopes had been pinned but a few years previously were already beginning to prove ineffective in large numbers of cases owing to the preponderance of resistant gonococcus strains which had built up. As R. R. Willcox points out in another article in this issue, no strain was resistant to penicillin at the outset and no strain is now completely resistant to it. But there is evidence from many parts of the world (Dr Willcox deals mainly with experience in England) that a relative resistance, or reduced sensitivity, is being acquired. The preparations producing prolonged but low levels of penicillinaemia are no longer giving good results, and higher serum levels are now required. The question naturally arises whether we are again approaching the serious situation which confronted venereologists as the sulfonamides gradually lost their power. Fortunately, as Dr Willcox points out, there are today a number of effective alternatives to penicillin in other antibiotics; moreover, it is very probable that a complete resistance to penicillin, should it occur at all, would not develop for many years to come. There is no doubt, however, that the situation is one which demands close vigilance, especially among certain population groups which for

[1] A summary of this paper appeared in *Chron. Wld Hlth Org.*, 1958, **12**, 189.

[2] A summary of this article appeared in *Chron. Wld Hlth Org.*, 1958, **12**, 295.

various reasons may be at particular risk, as is clear from a separate note by Dr Willcox on treatment failures in certain minority groups in Great Britain.

The decreasing sensitivity of the gonococcus to penicillin is also touched on by T. Guthe in the first article in this issue, where he discusses another important aspect of venereal disease control—prevention—putting forward a plea for establishing venereal disease control programmes on a considerably broader foundation than is usual at present. Y. Tanami & J. Yamamoto, in another article, describe the control measures now applied in Japan and the extent of the venereal disease problem there. Another facet of prevention in Japan is presented by T. Ohno and his co-authors in a note on the prophylaxis of venereal disease in Japanese prostitutes by the use of vaginal foaming tablets of antibiotics. T. H. Wong & P. N. Wang report on the prevalence of venereal infections in prostitutes and similar groups of women in Taiwan.

It has become apparent in the course of the mass treatment campaigns against the treponematoses conducted in so many countries in the past few years that the techniques used for giving intramuscular injections vary quite considerably from area to area—and not always to the good, as certain areas have been observed to suffer from a higher number of local abscesses than others. C. J. Hackett & C. W. Göckel have therefore prepared a summary of the recommended techniques and procedures for intramuscular injection with a view to providing a useful guide to those engaged in mass campaigns.

Serological aspects of venereal disease control are also considered in this issue of the Bulletin. R. H. Allen & D. B. Tonks study the relation of the chemical structure of phosphatides in cardiolipin antigens to reactivity in the VDRL and Kolmer tests. H. Schmidt & M. W. Bentzon report on investigations as to the sensitivity of a recent serological test for syphilis (the Rapid Plasma Reagin test) in which plasma is substituted for serum.

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Toxicité des pesticides pour l'homme et les animaux (1957)

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